

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,043,082 B2  
APPLICATION NO. : 09/754310  
DATED : May 9, 2006  
INVENTOR(S) : Kieran Gerard Larkin et al.

Page 1 of 4

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

COLUMN 1

Line 16, "x-ray" should read --x-ray--.

COLUMN 3

Line 48, "comprises." should read --comprises--.

COLUMN 5

Line 21, "an" should be deleted.

Line 54, " $f(x, y)=a(x, y)+b(x, y), \cos [2\pi (u_o\{x-x_o\}+v_o\{y-y_o\})-\chi]$ " should read  
-- $f(x, y)=a(x, y)+b(x, y), \cos [2\pi (u_o\{x-x_o\}+v_o\{y-y_o\})+\chi]$ --.

COLUMN 6

Line 20, "wherein  $l=\sqrt{b-1}$ " should read --wherein  $i=\sqrt{-1}$ --.

Line 34, "satisfies" should read --satisfy--.

COLUMN 7

Line 5, " $P(u, v)=\exp[iX(u, v)]=P(-u, -v)=-\exp[i(X(u, v)+\pi)]$ " should read  
-- $P(u, v)=\exp[i\chi(u, v)=-P(-u, -v)=-\exp[i(X(u, v)+\pi)]$ --.

Line 35, " $G_\Omega(u, v)=(B_\Omega(u-u_o, v-v_o)\exp[iX]+B_\Omega(u+u_o, v+v_o)\exp[-i\chi])e^{-2\pi(ux_0+vy_0)}$ ,"  
should read  
-- $G_\Omega(u, v)=(B_\Omega(u-u_o, v-v_o)\exp[i\chi]+B_\Omega(u+u_o, v+v_o)\exp[-i\chi])e^{-2\pi i(ux_0+vy_0)}$ --.

COLUMN 9

Line 19, "an" should read --a--.

COLUMN 10

Line 29, "2-dimensions,)" should read --2-dimensions),--.

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

**COLUMN 11**

Line 56, “ $2\pi(u+iv)=2\pi q \exp(i\phi)$ ” should read -- $2\pi(u+iv)=2\pi q \exp(i\phi)$ --.

**COLUMN 12**

Lines 6-9, “ $2\pi i q \exp(i\phi)G(u, v) \longleftrightarrow D\{g(x, y)\}$ ” (31)

$(2\pi i)^2 q^2 \exp(2i\phi)G(u, v) \longleftrightarrow D^2\{g(x, y)\}$ ” (32)

should read

$-2\pi i q \exp(i\phi)G(u, v) \longleftrightarrow D\{g(x, y)\}$ ” (31)

$(2\pi i)^2 q^2 \exp(2i\phi)G(u, v) \longleftrightarrow D^2\{g(x, y)\}$ ” (32)--.

Line 16, “is” should read --are--.

Line 23, “is” should read --are--.

Line 49, “operator” should read --operator--.

Line 61, “ $\exp(i\phi)G \longleftrightarrow D_M\{g(x, y)\}$ ” (33) should read

--  $\exp(i\phi)G \longleftrightarrow D_M\{g(x, y)\}$ ” (33)--.

**COLUMN 13**

Line 24, “greylevels” should read --grey levels--.

Line 44, “and 14E,” should read --and 14E--.

**COLUMN 15**

Line 34, “is” should be deleted.

Line 67, “patterns ie.” should read --patterns, i.e.,--.

**COLUMN 16**

$"V\{f(x, y)\}=F^{-1}\{\exp[i\phi]F\{f(x, y)\}\}$ ” (41)

$F\{f(x, y)\}=F(u, v)=$

$\int_{-\infty}^{+\infty} \int_{-\infty}^{+\infty} f(x, y) \exp[-2\pi i(ux+vy)] dx dy$   
 $F^{-1}\{F(x, y)\}=f(x, y)=$

$\int_{-\infty}^{+\infty} \int_{-\infty}^{+\infty} f(u, v) \exp[+2\pi i(ux+vy)] du dv$   
 $u=q\cos\phi\}$   
 $v=q\sin\phi\}$

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should read  

$$- V\{f(x, y)\} = F^{-1}\{\exp[i\phi]F\{f(x, y)\}\}$$

$$F\{f(x, y)\} = F(u, v) =$$

$$\int_{-\infty}^{\infty} \int_{-\infty}^{\infty} f(x, y) \exp[-2\pi i(ux+vy)] dx dy$$

$$F^{-1}\{F(x, y)\} = f(x, y) =$$

$$\int_{-\infty}^{\infty} \int_{-\infty}^{\infty} f(u, v) \exp[+2\pi i(ux+vy)] du dv$$

$$u = x \cos \phi$$

$$v = x \sin \phi$$

COLUMN 17

Line 27, "compensating" should read --compensated--.

COLUMN 18

Line 4, "advantage" should read --advantageous--.

Line 47, " $\alpha_{nm} = \text{Arg}\{ig_{nm} - i \exp[-i\beta_c]V\{g_{nm}\}\} \cong h[\chi + (\delta m + \delta n)/2]$ " should read  

$$-\alpha_{nm} = \text{Arg}\{ig_{nm} - i \exp[-i\beta_c]V\{g_{nm}\}\} \cong h[\chi + (\delta m + \delta n)/2]$$

COLUMN 19

Line 42, " $h_c(x, y) = \frac{\alpha_{nm} - \alpha_{mk}}{|\alpha_{nm} - \alpha_{mk}|}$ " should read

$$-h_c(x, y) = \frac{\alpha_{nm} - \alpha_{mk}}{|\alpha_{nm} - \alpha_{mk}|}$$

Line 53, "an" should be deleted.

COLUMN 21

Line 30, "a" (second occurrence) should read --an--.

COLUMN 22

Line 11, "sponds" should read --spond--.

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**COLUMN 25**

Line 14, "value" should read --values--.

Signed and Sealed this

Twentieth Day of February, 2007



JON W. DUDAS  
*Director of the United States Patent and Trademark Office*